Physics 109   Astronomy and Cosmology

Fall 1998

Section 1   TTh 7   Physics Lecture Hall

Faculty Dr. Jack Hughes   Serin 307   445-0980   office hour W5

Web-site `http://www.physics.rutgers.edu/~jackph/1998f`

Text *Astronomy, Journey to the Cosmic Frontier* (2nd edition) by John D. Fix

Overview In this course we shall discuss the historical foundations of Astronomy, the tools and techniques used by modern astronomers, the constituents of our solar system, and the processes by which it formed. The companion course, Ph 110 (taught this semester by Dr. Kosowsky and next semester by Dr. Hughes) covers the structure and evolution of stars, the properties of galaxies, and the past, present, and future of the Universe. There are no college-level prerequisites for either course, but typical high school algebra and science preparation is assumed.

Readings The weekly reading assignments are listed on the reverse side of this sheet. Readings are to be completed *before* the corresponding lectures.

Homework The first homework assignment will be handed out at the next class. Homework MUST be your own original work and will be collected in class on the dates noted. Late homework will be accepted only until the date indicated and will be assessed a 20% penalty. No homework will be accepted after the late date. Note that all homework MUST be turned in to the instructor. Solutions will be available for copying at the Math and Science Learning Centers after the graded homework papers are returned. **Note: homework counts for 1/3 of your grade!**

Examinations There will be two examinations, a mid-term and a final. The mid-term will be held in place of the usual class on Tuesday Oct. 27 and the final on Saturday, Dec. 19 9:00 AM - 10:30 AM at a location to be announced later. Both exams will be multiple choice, computer graded, and closed book. Materials from the text and lectures will be used in selecting exam questions.

Grades The course grade will be determined by the homework, the mid-term exam, and the final exam, weighting each equally.

Students with Disabilities Any student with a disability is urged to speak to Dr. Hughes early in the semester to make the necessary arrangements to support a successful learning experience. The Physics Department liaison for students with disabilities is Professor Mohan Kalelkar, Physics Building Room 301, phone 445-3878, email kalelkar@ruthep.rutgers.edu.

Observing There are observing sessions every 2^{nd} and 4^{th} Thursday of each month when the sky is clear that use the Serin Observatory 20-in telescope on the roof of the Physics & Astronomy building. Attendance at these observing sessions is optional.

Learning Centers The Math and Science Learning Centers provide support services for this course. Video tapes, computer demonstrations, tutoring help, homework solutions, and previous years' examinations are all available at the Learning Centers. The locations and hours of the Learning Centers are listed below.

Math & Science Learning Centers	
Allison Road Classroom Building	Chemistry Bldg., 3rd Floor
Busch Campus	Douglass College
445-3123, 445-3898	932-8991
9 am to 10 pm M-Th	9 am to 9 pm M-Th
9 am to 6 pm F	9 am to 5 pm F
2 pm to 10 pm Sat	closed Sat
2 pm to 10 pm Sun	3 pm to 9 pm Sun

Date	Lecture	
Sec. 1	Topic	Chapter
T Sept 1	Introduction	1
Th Sept 3	Celestial Motions	2
T Sept 8	Ancient Astronomy I	3
Th Sept 10	Ancient Astronomy II	3
T Sept 15	Copernicus & Tycho	4
Th Sept 17	Kepler & Galileo	4
T Sept 22	Newton's Laws of Motion	5
Th Sept 24	Gravity and Orbits	5
T Sept 29	Light	6
Th Oct 1	Telescopes	6
T Oct 6	Gas Laws, Radiation	7
Th Oct 8	Nuclear reactions, Radioactivity	7
T Oct 13	The Earth	8
Th Oct 15	The Earth	8
T Oct 20	The Moon	9
Th Oct 22	The Moon/Mercury	9,10
T Oct 27	**Mid Term Exam**	
Th Oct 29	Venus	10
T Nov 3	Venus/Mars	10,11
Th Nov 5	Mars	11
T Nov 10	Jupiter and Saturn	12
Th Nov 12	The Outer Planets	13
T Nov 17	Planetary Rings	12,13
Th Nov 19	Satellites	14
T Nov 24	Meteors, Asteroids, & Comets	15
Th Nov 26	**No Class**	
T Dec 1	Formation of Planetary Systems	18 (pp. 422-427)
Th Dec 3	The Sun	17
T Dec 8	The Sun	17
Sa Dec 19	**Final Exam**	